

Claim Amendments

Claim 1 (Previously cancelled).

2. (Previously amended) A spin-valve type magnetoresistive sensor comprising:
- a free ferromagnetic layer;
 - a pinned ferromagnetic layer;
 - a non-magnetic spacer layer sandwiched between the free ferromagnetic layer and the pinned ferromagnetic layer;
 - an anti-ferromagnetic layer disposed adjacent to the pinned ferromagnetic layer;
 - a non-magnetic back layer disposed adjacent to the free ferromagnetic layer on a side of the free ferromagnetic layer opposite the non-magnetic spacer layer;
 - and
 - an electron-reflective layer disposed adjacent to the back layer on a side of the non-magnetic back layer opposite the free ferromagnetic layer, the electron-reflective layer comprising a tantalum oxide film formed from a tantalum layer having a thickness within a range of approximately 0.5 to 1.75 nm.

Claims 3-7 (Previously cancelled).

8. (Previously amended) The sensor of claim 2, wherein the non-magnetic back layer has a thickness within a range of approximately 0.5 to 1.5 nm.
9. (Previously amended) The sensor of claim 2, wherein the non-magnetic back layer comprises Cu.

Claim 10 (Previously canceled).

11. (Previously amended) An apparatus for sensing magnetic flux comprising:
- a spin-valve type magnetoresistive sensor having:
 - a free ferromagnetic layer;
 - a pinned ferromagnetic layer;
 - a non-magnetic spacer layer sandwiched between the free ferromagnetic layer and the pinned ferromagnetic layer;
 - an anti-ferromagnetic layer disposed adjacent to the pinned ferromagnetic layer;
 - a non-magnetic back layer disposed adjacent to the free ferromagnetic layer on a side of the free ferromagnetic layer opposite the non-magnetic spacer layer; and
 - an electron-reflective tantalum oxide layer disposed adjacent to the non-magnetic back layer on a side of the non-magnetic back layer opposite the free ferromagnetic layer.

Claims 12-21 (Previously canceled).

22. (Previously amended) A spin-valve magnetoresistive sensor, comprising:
- a free magnetic layer;
 - a pinned magnetic layer;
 - a nonmagnetic spacer layer disposed between the free magnetic layer and the pinned magnetic layer;
 - an antiferromagnetic layer adjacent to the pinned magnetic layer, the pinned magnetic layer pinned by the antiferromagnetic layer; and

a non-magnetic back layer disposed adjacent to the free magnetic layer, the free magnetic layer adjoining and being disposed between the non-magnetic back layer and the nonmagnetic spacer layer, the non-magnetic back layer having a thickness within a range of approximately 0.5 to 1.5 nm;

an electron-reflective layer that adjoins the non-magnetic back layer on a side of the non-magnetic back layer opposite the free magnetic layer, wherein the electron-reflective layer comprises a tantalum oxide film.

23. (Previously amended) The spin-valve magnetoresistive sensor of claim 22, wherein the tantalum oxide film is formed from a tantalum layer having a thickness within a range of approximately 0.5 to 1.75 nm.

Claims 24 (Previously canceled).

25. (Previously amended) The spin-valve magnetoresistive sensor of claim 22, wherein the non-magnetic back layer comprises two or more non-magnetic metal layers.